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**United States Department of Energy**

**Savannah River Site**

**AREA COMPLETION STRATEGY  
for the Savannah River Site (U)**

**ERD-EN-2005-0084**

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## LIST OF ACRONYMS

ACT	Area Completion Team
ARAR	applicable or relevant and appropriate requirement
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMI	Corrective Measures Implementation
CMS	Corrective Measures study
COC	constituent of concern
D&D	deactivation and decommissioning
DPFR	Decommissioning Project Final Reports
EECA	Engineering Evaluation Cost Analysis
ESD	Explanation of Significant Differences
ESV	ecological screening value
FDE	Facility Decommissioning Evaluation
FFA	Federal Facility Agreement
FS	Feasibility Study
IU	Investigative Units
LUCIP	Land Use Control Implementation Plan
NPL	National Priorities List
OU	operable unit
PRG	preliminary remedial goal
RA	remedial action
RACR	Remedial Action Complete Report
RAIP	Remedial Action Implementation Plan
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RGO	remedial goal option
RI	Remedial Investigation
ROD	Record of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SGCP	Soil and Groundwater Closure Projects
SSL	soil screening level
SR	Savannah River
SRS	Savannah River Site
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WP	Workplan

## I. BACKGROUND

On May 22, 2003, the Department of Energy – Savannah River Operations Office (SR), the U.S. Environmental Protection Agency – Region 4 (USEPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) agreed to support accelerated cleanup of the Savannah River Site (SRS)<sup>1</sup>. As part of that agreement, the parties initiated a process of re-defining their strategic approach to cleanup based on a concept of executing work on an “area basis”. Historically, SRS environmental restoration and deactivation and decommissioning (D&D) have been independent activities. The Area Operable Unit (OU) concept integrates characterization, assessment and remediation of SRS industrial areas that may include contaminated soils, sediments, and facility residuals that remain following D&D (e.g., slabs, sub-grade structures).

As a result of several meetings<sup>2</sup> as well as project specific implementation of the Area concept (i.e., T Area), the parties have established this Area Completion Strategy for 14 major industrial areas at SRS (see Highlight). The Fiscal Year 2005 Appendix E to the SRS Federal Facility Agreement (FFA) lists the projected deliverable dates for all SRS Resource Conservation and Recovery Act/Comprehensive Environmental Response, Compensation and Liability Act (RCRA/CERCLA) units including the designated RCRA/CERCLA units and D&D Facilities (or Remnants) that May Warrant Response Action assigned to an Area OU.

### **Highlight: Area OU Projects**

- T Area
- M Area
- P Area
- R Area
- N Area
- C Area
- D Area
- K Area
- L Area
- A Area
- F Area
- F Tank Farm
- H Area
- H Tank Farm

## II. OBJECTIVE

This strategy establishes the guidelines, roles and responsibilities and the associated decision making process for Area Project Core Teams in their implementation of Area OU projects at SRS. The strategy should be considered a “living document” that will be updated as necessary to incorporate lessons learned through implementation.

## III. GUIDELINES

The following guidelines define the expectations, flexibility and constraints applicable to the scoping and implementation of Area OU projects.

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<sup>1</sup> In July of 2003 all parties signed a *Memorandum of Agreement for Achieving an Accelerated Cleanup Vision at the Savannah River Site*.

<sup>2</sup> An Area Completion Team was convened in September 2004, January 2005, and February 2005 to discuss the Area OU approach documented in this strategy.

1. While the Area completion process integrates a broad set of environmental challenges that require response, it will be implemented consistent with existing regulations, the FFA, the RCRA permit, and the established Core Team decision making process<sup>3</sup>.
2. As stated in the 2003 *Memorandum of Agreement for Achieving an Accelerated Cleanup Vision at the Savannah River Site* (USDOE, 2003), the parties are committed to identifying technical and administrative opportunities to streamline and accelerate the Area completion process. This includes accelerated characterization, combined documentation, and early identification and streamlined evaluation of the range of likely response actions. Note that the Area completion process does not preclude consideration of innovative technologies as necessary to address problem(s) warranting action. A generic schedule for Area OU projects is provided in Figure 3. As necessary, the individual Area Project Core Teams will modify their project schedules.
3. An Area OU is defined by the RCRA/CERCLA units (FFA Appendix C.1) and D&D facilities (remnants) remaining after decommissioning (FFA Appendix C.4) that may warrant a response action. These designated units and facilities are assigned to an Area OU in FFA Appendix C.5. Definitive geographical boundaries are not required to be defined as part of an Area OU.
4. Completion of an Area OU is achieved when:
  - a. risks from all relevant sources and releases (i.e., RCRA/CERCLA units and facility remnants) are demonstrated to be at levels acceptable for the appropriate future use and/or long term response actions are in place and operating as intended; and
  - b. SCDHEC and USEPA approve the Remedial Action Complete Report (RACR) or equivalent.
5. Deletion of the SRS from the National Priorities List (NPL) is not a goal of the Area completion process, rather a subsequent step to be administered as necessary after all response action objectives have been attained.
6. Comprehensive groundwater investigation and remediation is not within the scope of Area OU projects (i.e., groundwater plumes will be addressed as separate operable units). However, an adequate review of groundwater data must be performed as part of Area OU project scoping to ensure that remedial decisions for the surface units (including the vadose zone, if appropriate) are acceptable. Further, limited groundwater investigation may be required to identify all sources within the area, facilitate the development of the conceptual site model, and confirm the need for an interim action to address source reduction or removal.
7. Remediation of vadose zone soils may or may not be addressed as part of the Area OU project. Vadose zone conditions will be investigated to the extent necessary for the Area

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<sup>3</sup> In late 1999 and early 2000, USDOE-SR, USEPA, and SCDHEC began implementing a collaborative project scoping process based on the Principles of Environmental Restoration. This scoping process remains the preferred means to communicate project understanding and direction. See Figure A.1 for decision making steps.

Project Core Team to define whether or not vadose zone contamination is best managed as part of the Area OU or related groundwater OU.

8. Ongoing RCRA projects will continue to be executed consistent with the RCRA permit unless the Area Project Core Team determines that it is more effective to integrate project execution and documentation into the Area completion process. These RCRA units are listed on FFA Appendix H, RCRA-Regulated Facilities, and are subject to RCRA corrective action in accordance with the South Carolina Hazardous Solid Waste Amendments of 1984. Inclusion of RCRA projects into an Area OU will necessitate a RCRA permit modification. The SCDHEC RCRA program must approve any incorporation of RCRA permitted facilities and associated remedial actions in the Area OU.
9. Ongoing CERCLA or RCRA/CERCLA projects will be integrated into the Area OU unless the Area Project Core Team determines that maintaining the current administrative path for the ongoing project is more effective. These units are listed on FFA Appendix C, RCRA/CERCLA Units. The CERCLA units are subject to remedial actions under CERCLA Section 120. The RCRA/CERCLA Units are subject to remedial action under CERCLA Section 120 and corrective action under RCRA 3004 (u).
10. Area OU projects must integrate data and associated risk analyses for multiple sources and various media. Accordingly, revised risk assessment protocols have been established and are documented in the *Soil and Groundwater Closure Projects Regulatory Document Handbook* (WSRC, 2004).

Media evaluated in a risk assessment include soil, sediment, groundwater, surface water, and air. Inclusion of facility remnants in the Area OU projects introduced concrete as another potential exposure media. Exposure assumptions for concrete media are not available in USEPA guidance and were therefore developed by the SGCP Risk Assessment Design Team. These exposure assumptions are included in the revised risk assessment protocols and were used to establish Preliminary Remediation Goals (PRGs) for concrete media.

#### **IV. ROLES AND RESPONSIBILITIES**

Implementing the Area completion process involves various levels of management responsibility (see Figure 1). The roles and responsibilities of each entity are defined below:

Executive Board: USDOE, USEPA, and SCDHEC management that will serve as a forum for establishing the vision for the Area OU program. This Board will establish program expectations and resolve issues that are elevated from the Management Core Team. Executive Board Members are

- USDOE – Assistant Manager for Closure Projects
- USEPA – Chief, Federal Facilities Branch
- SCDHEC – Bureau Chief or Assistant Bureau Chief, Bureau of Land and Waste Management Division

Management Core Team: USDOE, USEPA and SCDHEC management responsible for ensuring resources are available to effectively implement the Area OU projects. The Management Core Team resolves Area OU program issues. Management Core Team Members are

- USDOE - Director of Soils and Groundwater Project
- USEPA - Chief, NC/SC/GA Federal Oversight Section
- SCDHEC – Director, Division of Site Assessment and Remediation

FFA Project Managers: USDOE, USEPA and SCDHEC personnel designated under the terms of FFA Section XXVIII responsible for the effective and coordinated implementation of the FFA, resolving issues of integration of FFA activities (e.g., App. C, G, and K), establishing programmatic schedules (i.e., App. E), and administering the strategy for Area completion.

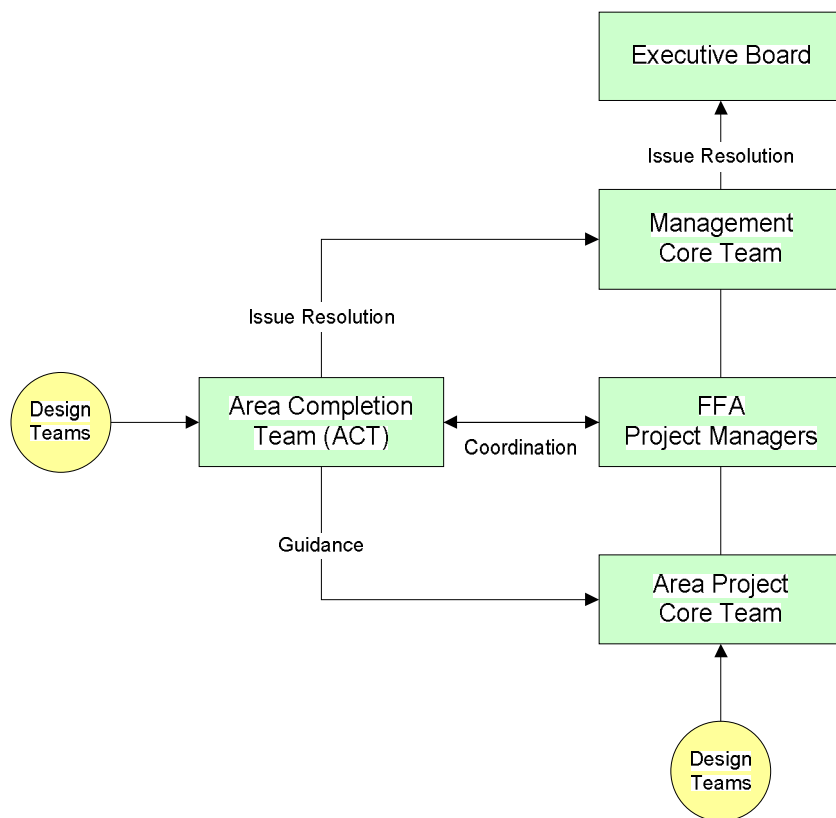
Area Completion Team (ACT): USDOE, USEPA, SCDHEC, and contractor staff responsible for development of an Area Completion Strategy (this document) to guide the Area Project Core Teams in their implementation of Area OU projects. The ACT will function similar to Design Teams in that they will evaluate and document Area completion process improvements as lessons are learned through implementation. The ACT will interface with FFA Project Managers to ensure consistency.

Design Teams: USDOE, USEPA, and SCDHEC subject matter experts responsible for resolving specific technical issues (i.e., risk assessment, groundwater modeling, etc.) and developing protocols and procedures as appropriate. Design teams are formed on an as needed basis and report to the ACT for Area completion issues.

Area Project Core Teams: USDOE, USEPA and SCDHEC staff responsible for project scoping and response action decision making on specific areas. The Area Project Core Teams are responsible for ensuring that Area OU projects achieve “completion” consistent with this strategy and on the schedule established in Appendix E of the FFA.

Project Teams: Agency and contractor technical staff with soils, groundwater, and decommissioning expertise responsible for the compilation, evaluation, and synthesis of technical information in support of core team decision making.

**Figure 1: Relationship of Entities Involved in the Area Completion Process**



## V. AREA COMPLETION PROCESS

Transitioning from the historical OU approach to the Area OU approach, while modifying the technical scope (i.e., additional RCRA/CERCLA Units and D&D Facilities [or Remnants] that May Warrant Response Action), does not significantly modify the cleanup decision making process. The core teams are still responsible for defining problems warranting action and implementing response actions. Specific complexities introduced to the process include:

- *Multiple RCRA/CERCLA Units and D&D Facilities (or Remnants) that May Warrant Response Action* – This may require additional effort in project scoping to maintain a consistent technical understanding. Grouping of RCRA/CERCLA Units and D&D Facilities (or Remnants) that May Warrant Response Action into the appropriate exposure units and associated risk calculations will need to be determined on an area-specific basis depending upon the proximity and configuration of contamination source areas (*SGCP Regulatory Document Handbook*, ERD-AG-003, Risk Assessment Protocols).



- *Increased utilization of “pre-Workplan characterization” data* – This allows the project team to collect information prior to Workplan approval based on historical information and likely data needs. In order to minimize the need for additional sampling, effective scoping prior to and during RCRA Facility Investigation/Remedial Investigation/Workplan (RFI/RI/WP) development to facilitate early field starts is critical. The field start milestone will not be formally achieved until SCDHEC and USEPA approve the RFI/RI/WP.
- *Combined RFI/RI/BRA/CMS/FS documentation* – This will require scoping in parallel with document development and may extend typical review/comment periods.
- *Incorporation of remnants from facility disposition (e.g., slabs)* – This will require integration of data needs and associated translation of data from one program to another. Figure 2 illustrates the D&D process and associated documentation.

*Varied pace of project execution* among a) soils and groundwater scope yet to be initiated, b) ongoing soils and groundwater scope, c) D&D scope yet to be initiated; and d) ongoing D&D scope – This will require Area Project Core Team negotiations on how to most effectively configure the Area OU project (e.g., administrative paths for ongoing CERCLA or RCRA/CERCLA units may not be integrated into the Area OU Record of Decision [ROD]). To complete the overall understanding of site conditions and cleanup strategies, where appropriate, the Area OU ROD will reference the response actions executed under another administrative path for units proximate to the Area OU.

The generic schedule for an Area OU project is provided in Figure 3. An overview of the scoping meetings, technical activities and points of D&D integration associated with the Area completion process are presented in Figure 4. A more detailed description of the Area OU scoping process is provided in Appendix A.

**Figure 2: D&D Planning Process**

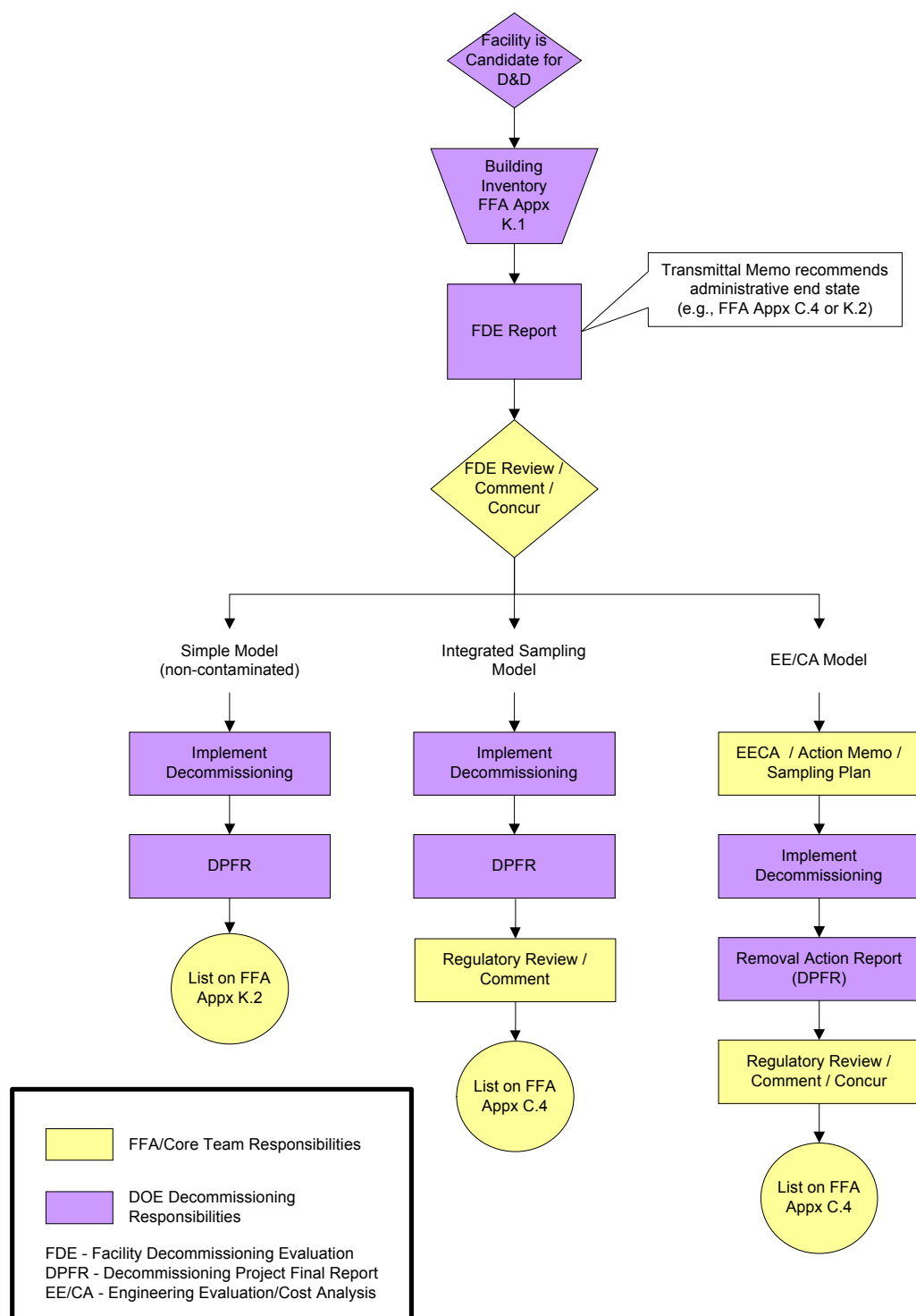
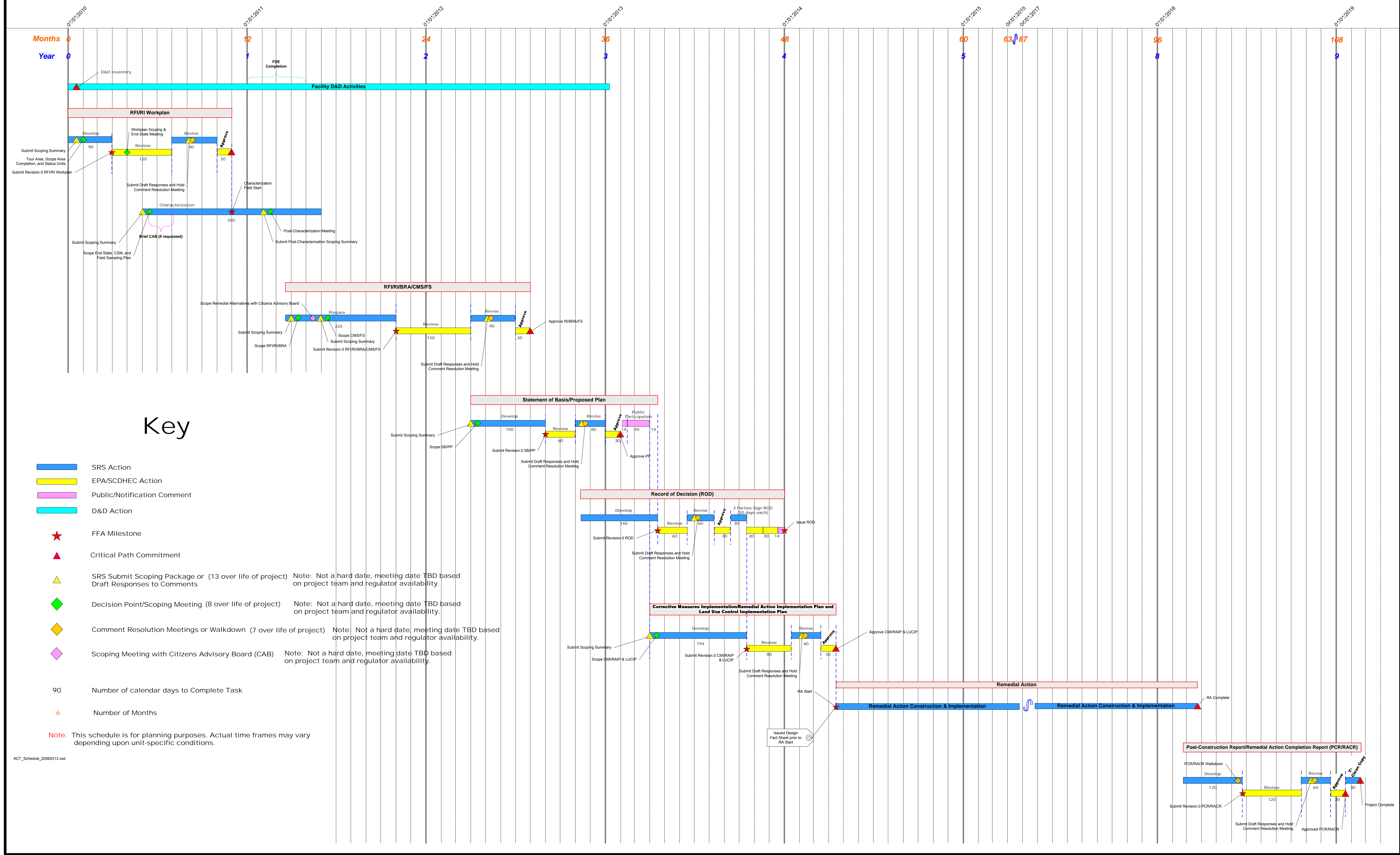
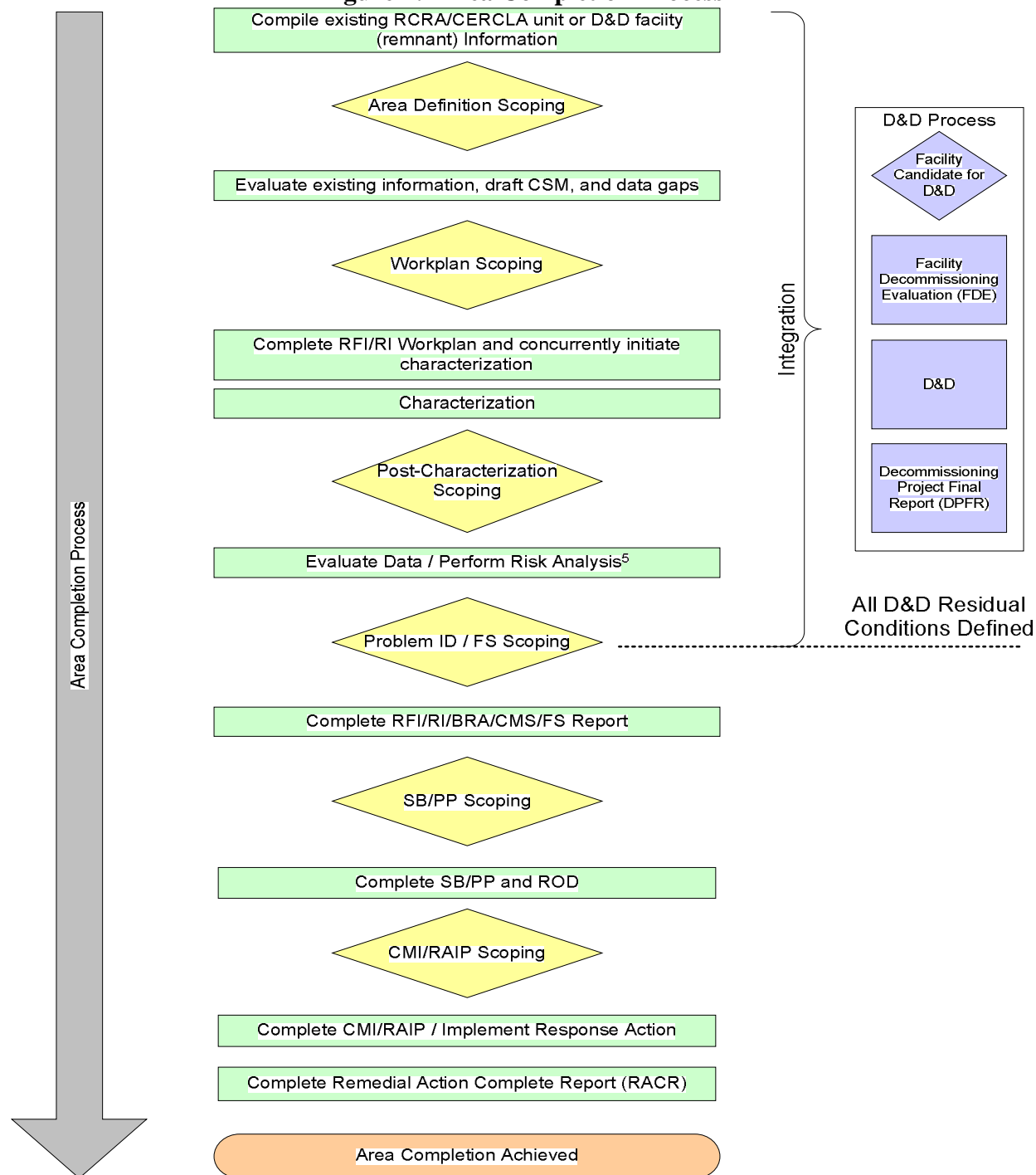


Figure 3. Generic Area Completion Team (ACT) Schedule



**Figure 4: Area Completion Process<sup>4</sup>**



<sup>4</sup> Standard scoping meetings in the project timeline are established in the Generic ACT Schedule (Figure 3). The number and frequency of meetings are at the discretion of the APCT based on the scope and schedule of the project.

<sup>5</sup> Available analytical data for D&D Facilities (or Remnants) that May Warrant Response Action will be included at this step.

## ***Documents and Protocols***

Area OU documentation will generally follow the existing SRS document path and development protocols (WSRC, 2004). In addition to the Area OU documentation, the D&D program is developing documentation requirements associated with the D&D process. The documents and associated review and approval expectations are summarized in Tables 1 and 2.

**Table 1: Area Operable Unit Documentation – Soil and Groundwater Closure Projects**

<b>DOCUMENT</b>	<b>AGENCY AUTHORITY and REQUIRED ACTION</b>	<b>REVIEW / REVISE/ APPROVAL CYCLE<sup>6</sup></b>	<b>REFERENCE</b>
RFI/RI/WP	<u>USDOE/USEPA/SCDHEC</u> Approval	120/90/30	ERD-AG-003, technical protocols and RFI/RI/WP template
RFI/RI/BRA/CMS/ FS	<u>USDOE/USEPA/SCDHEC</u> Approval	150/90/30	ERD-AG-003, technical protocols and RFI/RI/BRA/CMS/FS template
SB/PP	<u>USDOE/USEPA/SCDHEC</u> Approval	60/60/30	ERD-AG-003, PP template
ROD	<u>USDOE/USEPA/SCDHEC</u> Approval	60/60/30	ERD-AG-003, ROD template
CMI/RAIP & LUCIP	<u>USDOE/USEPA/SCDHEC</u> Approval	90/60/30	ERD-AG-003, RAIP template
RACR <sup>7</sup> (or equivalent)	<u>USDOE/USEPA/SCDHEC</u> Approval	120/60/30	ERD-AG-003, PCR template

<sup>6</sup> Area Project Core Teams may modify schedules based on project complexity.

<sup>7</sup> USEPA, 2000.

**Table 2: Area Operable Unit Documentation –  
Deactivation and Decommissioning Program**

<b>DOCUMENT</b>	<b>AGENCY AUTHORITY and REQUIRED ACTION</b>	<b>REVIEW/ RESPONSE CYCLE<sup>8</sup></b>	<b>REFERENCE</b>
Facility Decommissioning Evaluation (FDE)	<u>USEPA/SCDHEC</u> Comment/Concur  <u>USDOE</u> Comment Response/ Issue Transmittal Memo	Project Specific	Site D&D Protocol for Review and Concurrence on Facility Decommissioning Evaluations
Decommissioning Project Final Report (DPFR)	<u>USEPA/SCDHEC</u> Simple Model: Review Integrated Model: Review/Comment  <u>USDOE</u> Transmittal Memo	Project Specific	Site D&D Protocol for Review and Concurrence on Decommissioning Project Final Reports
Engineering Evaluation / Cost Analysis (EE/CA)	<u>USEPA/SCDHEC</u> Review/Comment  <u>USDOE</u> Comment Response/Issue Action Memorandum	Project Specific	Site D&D Protocol for Review and Concurrence on Facility Decommissioning Evaluations

## **VI. IMPLEMENTATION**

Area OU projects will be implemented according to the negotiated schedule provided in Appendix E of the FFA. Throughout implementation, the Area Project Core Teams will determine the appropriate schedule of scoping meetings, document review and approval cycles, and the integration with other efforts (e.g., D&D, ongoing soil and groundwater projects, active facilities). As experience is gained, this strategy may be modified to foster continuous process improvements. The ACT will oversee Area Project Core Teams, evaluate issues, modify the process and re-establish guidelines as needed.

<sup>8</sup> D&D schedules are dependent on document type, project complexity and level of agency interaction (i.e., review, comment, and/or concurrence).

## VII. REFERENCES

FFA, 1993. *Federal Facility Agreement for the Savannah River Site*, Administrative Docket No. 89-05-FF (Effective Date: August 16, 1993).

WSRC, 2004. *Soil and Groundwater Closure Projects Regulatory Document Handbook*, ERD-AG-003, Rev. 15, Washington Savannah River Company, Aiken, SC.

USDOE, SCDHEC, USEPA; USDOE, 2003. *Memorandum of Agreement for Achieving an Accelerated Cleanup Vision*, July 8, 2003, United States Department of Energy, Savannah River Site, Aiken S.C.

USEPA, 2000. *Close Out Procedures for National Priorities List Sites*, , Office of Emergency and Remedial Response, United States Environmental Protection Agency, OSWER Directive 9320.2-09A-P, Washington, D.C., January 2000.

## VIII. GLOSSARY

**Area Completion Strategy:** The strategic plan for accelerating environmental cleanup at SRS through the completion of areas within watersheds. Completion of an area is achieved when risk from all RCRA/CERCLA units and D&D facility remnants assigned to an Area Operable Unit are demonstrated to be at levels appropriate for future use and/or long term response actions are in place and SCDHEC and USEPA have approved the Remedial Action Complete Report (RACR).

**Area Operable Unit (Area OU):** The term used to define the group of subunits (i.e., RCRA/CERCLA units and D&D facilities [remnants] remaining after decommissioning) that will be addressed under a final Record of Decision for an Area. The Area OU and its subunits will be listed in FFA Appendix C.5.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 1980:** A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act.

**Characterization:** The compilation of all available data about the waste units to determine the rate and extent of contaminant migration resulting from the waste site, and the concentration of any contaminants that may be present.

**Corrective Action:** A USEPA requirement to conduct remedial procedures under RCRA 3998(h) at a facility when there has been a release of hazardous waste or constituents into the environment. Corrective action may be required beyond the facility boundary and can be required regardless of when the waste was placed at the facility.

**Deactivation and Decommissioning Facilities (or Remnants):** Any building(s) and functional systems (e.g., equipment, process, systems, piping) identified in the FFA Appendix K.1 (D&D Facilities to be Decommissioned) that will be evaluated to determine if there has been a release or substantial threat of release of hazardous substances to the environment. Based on the facility evaluation/decommissioning model selection process, D&D facilities identified in FFA Appendix K.1 will be moved to either Appendix K.2 (D&D Facility [or Remnants] that Require No Further Evaluation or No Response Action) or FFA Appendix C. 4 (D&D Facilities [or Remnants] that May Warrant Response Action). Facilities (remnants) listed on FFA Appendix C.4 may be identified as subunits to an Area OU in FFA Appendix C.5.

**Exposure Unit:** Risk assessment term used to denote the areal extent of a receptor's movements during a defined time period.

**Federal Facility Agreement (FFA):** The legally binding agreement between regulatory agencies (USEPA and SCDHEC) and regulated entities (USDOE) that sets the standards and schedules for the comprehensive remediation of the SRS.

**Investigative Unit (IU):** Defined geographic areas within an Area OU determined during the characterization phase to allow for a more holistic investigation of subsurface contaminant migration and/or principal threat source material (PTSM) concerns.

**National Priorities List:** USEPA's formal list of the nation's most serious uncontrolled or abandoned waste sites, identified for possible long-term remedial response, as established by CERCLA.



**Operable Unit (OU):** A discrete action taken as one part of an overall site cleanup. The term is also used in USEPA guidance documents to refer to distinct geographic areas or media-specific units within a site. A number of operable units can be used in the course of a cleanup.

**Remedial Action Complete Report (RACR):** A report that documents that remedial action objectives have been met and/or active remedies are in place and long term actions are defined.

**Resource Conservation and Recovery Act (RCRA), 1976:** A Federal law that established a regulatory system to track hazardous substances from their generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent the creation of new, uncontrolled hazardous waste sites.

**RCRA/CERCLA Units:** Operable units listed in FFA Appendix C that will undergo integrated investigative and reporting requirements to satisfy both RCRA and CERCLA. RCRA/CERCLA units may be identified as subunits to an Area OU in FFA Appendix C.5.

## **APPENDIX A - AREA OPERABLE UNIT PROJECT SCOPING**

Scoping is the process of building consensus within the Core Team on the path forward for the project. Scoping consists of communicating existing information throughout the project life-cycle to ensure that the Area Project Core Team and the supporting project team share a common understanding of site conditions and cleanup strategies. The intention of frequent scoping is to establish a paradigm of “communicate – agree – document” by which the formal cleanup documentation is a result of collaboration. Throughout the scoping process, the Area Project Core Team employs the DOE Principles of Environmental Restoration as a guide for establishing a more effective approach to remedial decision making. The emphasis on each scoping meeting is a thorough presentation of the most current project information, a shared technical understanding of conditions and problems, and robust questioning of the technical information to ensure confident real-time decision making. The outcome of scoping will be alignment of USDOE, USEPA, SCDHEC, and contractor staff with respect to the following decisions:

- Presence/absence of a problem warranting action;
- Remedial action objectives (RAOs);
- Scope of problem warranting action; and
- Response action(s).

These decisions will be addressed on each RCRA/CERCLA unit and D&D Facility (or Remnant) that May Warrant Response Action that are listed in FFA Appendix C for a given Area OU. RCRA/CERCLA units and D&D Facilities (or Remnants) that May Warrant Response Action may be defined by a single known or potential release such as a discrete physical (e.g., pipeline, basin, building slab) or geographic (e.g., overflow area, seep line) component.

The Area OU may be divided into exposure units to gain efficiencies in characterization, risk assessment and remediation activities. An exposure unit denotes the areal extent of a receptor's movements during a defined time period. For example, an industrial worker at a large industrial facility may move about the entire facility or sections of the facility in a single day. The concept of exposure units is important when designing a representative sampling plan. Individual releases with similar histories, similar contamination profiles, and/or close proximity to one another may be combined into a single exposure unit for the risk evaluation.

In many industrial areas, sampling plans based on exposure units may not be appropriate if the majority of the contamination is subsurface and not defined by receptor exposure patterns. For this reason, investigative units (IUs) are introduced at the characterization phase in order to design a sampling plan that adequately represents contaminant migration and/or principal threat source material (PTSM) concerns. For Area OUs, characterization activities using the IU approach allows for a more holistic investigation to determine impact to the environment. Data collected during the IU investigation will be reassigned to the appropriate exposure unit during the risk evaluation.

The decision logic presented in Figure A.1 identifies core team decisions that should be made at each scoping meeting. The general considerations related to the key project decisions are:

- Available information for each RCRA/CERCLA unit and D&D Facility (or Remnant) that May Warrant Response Action under a given Area OU will be evaluated at each project phase to determine if agreement can be reached for each scoping decision. Additional effort (e.g., data collection, risk analysis, fate and transport modeling) will ONLY be performed as needed to support specific decisions for which Core Team agreement cannot be reached using existing information.
- Discussions will not be limited by the current phase of the project (e.g., RI Workplan phase) because often considering decisions that will be made in subsequent project phases helps to focus the discussion, especially in terms of uncertainties.
- Uncertainty will always exist in decision-making, and it is the responsibility of the Area Project Core Team to determine which uncertainties are significant and how they will be managed.
- Discussions that cannot be correlated to a decision should be limited or avoided to ensure the highest productivity for each scoping decision.

Communication of technical information and Area Project Core Team agreement on key project decisions prior to formalizing information in the standard RI/FS documentation is critical. Accordingly, meetings at specific points in the project timeline to accommodate this emphasis are established in all project schedules. The timing of these meetings is important to ensure that the Area Project Core Team and the supporting project team are in agreement before significant effort towards data collection, technical analysis or formal documentation is expended. The number and frequency of meetings are at the discretion of the Area Project Core Team based on the scope and schedule of the project.

Of special note is the integration of decommissioning information that will become available throughout the Area OU project lifecycle. Decommissioning information will be integrated as decommissioning progresses, however it is the intention of the Area OU approach to have residual facility conditions defined and integrated no later than the problem identification step to facilitate an integrated data/risk evaluation prior to response evaluation and selection. Decommissioning information that is not available at the problem identification step could be addressed through an Explanation of Significant Differences (ESD), ROD Amendment, or separate ROD if necessary. It is important to factor D&D schedules into the Area OU scoping process in order to identify facilities (or remnants) that fall into this category and to consider the potential impacts from these facilities (or remnants) to the overall Area completion strategy.

The scoping meetings and associated expectations are defined as follows:

#### Area Definition Scoping Meeting

The initial step in Area OU scoping is agreeing to the components of the Area OU project. Utilizing site maps, photographs and existing historical information, the Area Project Core Team meets to agree on the list of RCRA/CERCLA Units and D&D Facilities (or Remnants) that May Warrant Response Action that will comprise the Area OU project. These components guide the compilation of existing technical information by the project team in support of subsequent scoping efforts.

### Workplan Scoping Meeting

The work planning phase begins with the compilation of all available information related to the RCRA/CERCLA Units and D&D Facilities (or Remnants) that May Warrant Response Action in an Area OU. The Area Project Core Team and supporting project team will meet to discuss the available information, including:

- Process history;
- Data summary table including relevant screening values (e.g., preliminary remediation goals [PRG], ecological screening values [ESV], soil screening levels [SSL]) and any data correlations necessary to communicate the existing data;
- Identification of investigative units (IU) to be evaluated during the remedial investigation
- Preliminary evaluation of exposure units to be evaluated through risk assessment;
- Conceptual site model; and
- Contamination plan views and cross sections.

At the Workplan Scoping Meeting, the Area Project Core Team will address all decision steps in the scoping process (identified in Figure A.1) and reach agreement where possible and practicable. Steps where agreement cannot be reached indicate sources of uncertainty in available information. This uncertainty may represent data gaps warranting further information/data gathering. These data gaps are the basis for the scope detailed by the project team in the RFI/RI/WP.

For example, problem statements may be agreed to definitively (i.e., no uncertainty/data gaps), conditionally (i.e., additional data/evaluation is needed to confirm the expected presence of a problem), or there may be sufficient uncertainty that no agreement can be reached at all (i.e., nature and extent is not yet definable).

The land-use assumptions and receptors will be identified at the Workplan Scoping Meeting. If sufficient pre-Workplan characterization data or waste unit history is available, exposure units will be identified as early as possible to support the streamlined risk evaluation.

### Post-Characterization Meeting

The remedial investigation phase begins with executing the investigative activities established during the work planning stages. This may include intrusive and non-intrusive data collection efforts, review of historical information, etc. This does not include evaluating the available information using the entire spectrum of RI protocols (e.g., data uncertainty evaluations, constituent of concern [COC] screening, risk assessment, contaminant migration modeling, etc.). The Post-Characterization Meeting is focused on discussing the findings of the field work/information gathering prior to subjecting the data to the complete RI evaluation. The meeting will be supported by:

- Data summary table(s) including relevant screening values (e.g., PRG, ESV, SSL) and any data correlations necessary to communicate the findings;

- Refined conceptual site model;
- Maps of findings (e.g., plots of contamination); and
- Summary of any significant changes in technical understanding since workplan scoping.

The Area Project Core Team will address all decision steps in the scoping process (identified in Figure A.1) and reach agreement where possible and practicable. Steps where agreement cannot be reached indicate sources of uncertainty in available information (as augmented by recent data collection efforts). This uncertainty represents data gaps warranting further discussion to be provided in the RI documentation, or additional information/data gathering. In addition to generally concluding if data is sufficient to proceed with completing the remaining technical analyses (e.g., risk evaluation, modeling) and preparing the RFI/RI/BRA/CMS/FS report, other specific agreements include:

- Exposure media groups (e.g., 0-1 ft soils, 0-depth soils, 0-2 inches concrete, etc.) to be analyzed through the risk assessment;
- Validation that data quality objectives were satisfied (e.g., the expected data was collected); and
- Types of modeling necessary, as needed.

#### Problem Identification and FS Scoping Meeting

This meeting (or meetings) will address both the finalization of problem statements, and the evaluation of response actions. The supporting project team will discuss the results of implementing the RI protocols and identifying any significant changes in technical understanding prior to completing the RI documentation. This is effectively a “briefing” to ensure that the Area Project Core Team has an understanding of what will be contained in the RFI/RI/BRA/CMS/FS report and prepare them for validating the key conclusions. The problem identification portion of the meeting will be supported by:

- Key refinements in technical understanding since the Post-Characterization Meeting (e.g., changes in COCs that warrant action, exposure pathways of concern, etc);
- Unexpected conditions/surprises (e.g., additional contaminated media, unexpected immediate threat to human health and the environment);
- Summary of Risk Assessment
- Modeling/contaminant migration analysis results;
- Data uncertainty judgments subject to interpretation;
- Revised conceptual site model;
- Scope of problem warranting action; and
- Revised RAOs.

After agreement to the problem(s) warranting action, scope of problem and RAOs, the Area Project Core Team and supporting project team will scope the evaluation of likely response actions (i.e., FS) supported by:

- Problems, scope, and RAOs previously defined;

- Range of likely alternatives as developed throughout the scoping process thus far;
- Available information on the implementability, effectiveness, and cost of likely response actions (likely available from other site studies, or recent information gathering);
- Biases/presumptive approaches (e.g., relevant information from similar SRS decisions);
- Key assumptions; and
- Uncertainties and management strategies (especially those related to technology performance).

The Area Project Core Team **must reach agreement** on all scoping decisions. Where agreement can not be reached, the source(s) of uncertainty must be identified, a strategy for managing the uncertainty identified, and a decision reached on whether or not to proceed with the FS. Because the FS scoping meeting will ultimately result in a decision on the final range of alternatives, development and preliminary screening of alternatives will be provided to the Area Project Core Team prior to the FS scoping meeting. This will allow the Area Project Core Team to review the preliminary screening information in advance and to facilitate FS core team discussions on the alternatives to evaluate through detailed analysis. During the evaluation of alternatives it may be necessary for the project team to communicate with USEPA and SCDHEC technical support staff to discuss detailed issues related to modeling and cost estimating assumptions. These communications are necessary to ensure that a consistent set of assumptions is used to evaluate each alternative. Communication is intended to be informal and on an as needed basis.

#### Statement of Basis/Proposed Plan Scoping Meeting

During review of the RFI/RI/BRA/CMS/FS report by USEPA and SCDHEC, the Area Project Core Team will meet to select the preferred response action(s) for the RCRA/CERCLA Units and D&D Facilities (or Remnants) that May Warrant Response Action. This meeting will be supported by the following information:

- Analysis provided in the RFI/RI/BRA/CMS/FS report;
- Summary of key discriminators as a result of the evaluation against the nine criteria;
- Relevant information from other projects at SRS where similar problems were addressed.

As a result of this meeting, the project team will be able to draft a Statement of Basis/Proposed Plan (SB/PP) that is consistent with core team understanding and expectations.

#### Record of Decision Scoping

When thorough scoping of the SB/PP is achieved, it is normally not necessary for the Area Project Core Team to meet again before submittal of the ROD. However, the Area Project Core Team may decide to scope the ROD depending on the complexity of the Area OU project. This meeting will be supported by the following information:

- Remedial action objectives, evaluation of alternatives, and preferred response action as provided in the SB/PP report;

- Remedial actions from other RCRA/CERCLA Units and/or D&D Facilities (remnants) included in the Area OU;
- Public comments on the SB/PP report.

As a result of this meeting, the project team will be able to draft a ROD that is consistent with core team understanding and expectations.

#### Corrective Measures Implementation/Remedial Action Implementation Plan Scoping

The Area Project Core Team will meet, as appropriate, to discuss the design and implementation of the remedy selected. This meeting will be supported by the following information:

- Design strategy for the selected remedial action;
- Typical activities to be conducted during construction and implementation of the remedial action;
- Mechanism for demonstrating completion of the remedial action(s).

As a result of this meeting, the project team will be able to draft a Corrective Measures Implementation/Remedial Action Implementation Plan (CMI/RAIP) that is consistent with Area Project Core Team understanding and expectations.

#### Remedial Action Complete Scoping:

After the implementation of the remedial action(s), the Area Project Core Team will meet to assess the performance of the selected response, specifically confirming that RAOs were met and/or active remedies are in place and long-term actions are defined (e.g., monitoring, institutional controls). This meeting will be supported by:

- As-built/as-left pictures and diagrams; and
- Confirmatory sampling data

As a result of this meeting, the project team will be able to draft a RACR or equivalent that is consistent with Area Project Core Team understanding and expectations. The RACR will include the information outlined in Section 2 of the USEPA document, *Closeout Procedures for National Priorities List Sites* (USEPA, 2000)..

**Figure A.1: Area OU Scoping Decision Logic**

